

[REPRINT OF ARTICLE BY A. W. NICHOLSON, M. D., IN DETROIT LANCET, AUGUST, 1884.]

## An Analysis of One Hundred Cases of Labor.

Analyses of ordinary cases in the practice of medicine and surgery, if they do not possess the charm of novelty, at least supply facts that may enable the physician to proceed more wisely in regard to conditions with which he is brought in contact. The young practitioner is especially harrassed with the subject of "probabilities" appertaining to some of the series of analagous cases sure to be introduced at the very portal of the way that leads him into his professional career.

With the object of presenting the history of such a series, or of a fraction of such a series, of cases occurring in an ordinary country practice, I have taken from my record-book some particulars of a hundred cases of labor that were nearly consecutive in their occurrence. Cases where the period of gestation was too short to render possible the viability of the child, and a few cases where too few particulars were collected for tabulation, are omitted from the classification.

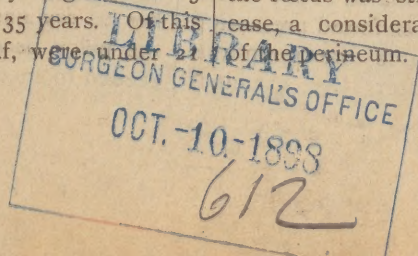
The following table is so arranged as conveniently to give answers to seven inquiries pertaining to each of fifty-seven cases of multiparæ, and of forty-three cases of primiparæ; they are, therefore, not arranged in the order of their occurrence. The limited number of the cases may make this presentation of little value to the social statist, and to the biologist, yet I trust it may possess some value, and that it may prove of interest to the physician in practice.

The conditions specified in the table may be summarized as follows:

**AGE OF MOTHERS AT LAST BIRTH-DAY.**—According to this record the age of the youngest mother among the multiparæ was 19 years. With this exception, the ages of mothers among multiparæ exceeded 21 years. The eldest in this class was 40 years. The average age among them was 28.4 years. Among the primiparæ the youngest was 15 years of age and the eldest 35 years. Of this

years of age. Their average age was 21.5 years. The age of one was not recorded.

**PRESENTATIONS.**—With one exception in this series the presentations were in some axis of the vertex. This may appear somewhat anomalous; yet, it is what might be likely to occur in nearly any other one hundred cases, the usual proportion of vertex presentations being, on the average, according to Madame Boivin, ninety-six, and H. Dubois, ninety-five in one hundred cases. With a few exceptions, the vertex presentations were of the first position, or left occipito-cotyloid. In two instances the position was not recorded. In two it was in the second position, or right occipito-cotyloid. In one of these latter (case 41, of the multiparæ), the duration of labor was short; the foetal heart-sound was distinctly heard upon the right side, and the placental souffle upon the left. In the other (case 36, of the primiparæ), the labor lasted six and one-half hours after my arrival at the bedside. In this case no particulars were recorded in relation to the sound of the foetal heart, or the placental murmur. In three cases the presentation was in the third position, or, right occipito-sacro-iliac. In each of these three cases the foetus was a female, one was among the multiparæ (case 17), and two were among the primiparæ (cases 7 and 42). In the first and second the duration of labor was six hours, and in the last, five hours. There were two instances of vertex presentation in the fourth position, or, left occipito-sacro-iliac. These were cases 15 and 21 among the primiparæ. In case 15, the os uteri was dilated one and one-half inches at the first examination. The labor was completed in one hour. In case 21, the dilatation of the os amounted to one inch at the first examination. Seven hours elapsed before the expulsion of the foetus. Anæsthetics and the use of the forceps were required, and the foetus was still-born. There was, in this case, a considerable, but incomplete, rupture of the perineum. In these two presentations





the foetuses were females. The only face presentation recorded in this series was among the primiparæ. In this case (37), both the first and second stages of labor were protracted, and the forceps were employed. The foetus was large, a male, and still-born. The average weight of the mother was about one

hundred pounds, and the weight of the child was ten and one-half pounds. In this case, also, there was a considerable rupture of the perineum. In two other confinements in which I attended this lady, the presentations were vertex, and face, respectively—both children living.

TABLE—SHOWING SOME PARTICULARS CONCERNING ONE HUNDRED CASES OF LABOR.

MULTIPARÆ.

| Number. | Age of mother last birthday. | Length of period of gestation. | Presentation. | Dilatation of os uteri on first examination. | Duration of labor after first examination till expulsion of foetus. | Sex of foetus. | Foetus living or still-born. | Number. | Age of mother last birthday. | Length of period of gestation. | Presentation. | Dilatation of os uteri on first examination. | Duration of labor after first examination till expulsion of foetus. | Sex of foetus. | Foetus living or still-born. |
|---------|------------------------------|--------------------------------|---------------|----------------------------------------------|---------------------------------------------------------------------|----------------|------------------------------|---------|------------------------------|--------------------------------|---------------|----------------------------------------------|---------------------------------------------------------------------|----------------|------------------------------|
| 1       | 25 yrs                       | 9 mths.                        | Vertex.       | 3 inches.                                    | 3 hrs.                                                              | Male.          | Living.                      | 30      | 26 yrs                       | 9 mths.                        | Vertex.       | 1½ inches.                                   | 2½ hrs.                                                             | Male.          | Living.                      |
| 2       | 23 "                         | 9 "                            | "             | 3 "                                          | 1 "                                                                 | "              | "                            | 31      | 26 "                         | 9 "                            | "             | Complete                                     | ¾ "                                                                 | Female         | "                            |
| 3       | 23 "                         | 7 "                            | "             | 2½ "                                         | ½ "                                                                 | "              | "                            | 32      | 30 "                         | 9 "                            | "             | 1½ inches.                                   | 2 "                                                                 | "              | "                            |
| 4       | 28 "                         | 9 "                            | "             | 1½ "                                         | 2½ "                                                                | Female         | "                            | 33      | 25 "                         | 9 "                            | "             | 1 "                                          | 2 "                                                                 | "              | "                            |
| 5       | 30 "                         | 9 "                            | "             | 1 "                                          | 12 "                                                                | "              | "                            | 34      | 25 "                         | 9 "                            | "             | 1 "                                          | 2 "                                                                 | "              | "                            |
| 6       | 35 "                         | 9 "                            | "             | 2 "                                          | 3 "                                                                 | "              | "                            | 35      | 35 "                         | 9 "                            | "             | Complete                                     | ½ "                                                                 | "              | "                            |
| 7       | 35 "                         | 9 "                            | "             | 1 "                                          | 4 "                                                                 | Male.          | "                            | 36      | 31 "                         | 9 "                            | "             | None.                                        | 8 "                                                                 | "              | "                            |
| 8       | 30 "                         | 9 "                            | "             | 1½ "                                         | 3½ "                                                                | "              | "                            | 37      | 35 "                         | 9 "                            | "             | 1½ inches.                                   | 2½ "                                                                | "              | "                            |
| 9       | 26 "                         | 9 "                            | "             | 1 "                                          | 14½ "                                                               | "              | "                            | 38      | 26 "                         | 9 "                            | "             | 1½ "                                         | 4 "                                                                 | Twin           | "                            |
| 10      | 35 "                         | 9 "                            | "             | 1 "                                          | 2 "                                                                 | "              | "                            | 39      | 30 "                         | 9 "                            | "             | 1 "                                          | 4 "                                                                 | Males.         | "                            |
| 11      | 25 "                         | 8 "                            | "             | 1 "                                          | 1 "                                                                 | "              | "                            | 40      | 26 "                         | 9 "                            | "             | Complete                                     | ½ "                                                                 | Male.          | "                            |
| 12      | 22 "                         | 9 "                            | "             | 1 "                                          | 6 "                                                                 | "              | "                            | 41      | 26 "                         | 9 "                            | "             | 2 inches.                                    | 1 "                                                                 | Female         | "                            |
| 13      | 30 "                         | 9 "                            | "             | 1 "                                          | 4 "                                                                 | Female         | "                            | 42      | 34 "                         | 9 "                            | "             | 1 "                                          | 3 "                                                                 | Male.          | Still-born.                  |
| 14      | 19 "                         | 9 "                            | "             | 2 "                                          | 1½ "                                                                | Male.          | "                            | 43      | 35 "                         | 9 "                            | "             | 1 "                                          | 3 "                                                                 | Female         | Living.                      |
| 15      | 30 "                         | 9 "                            | "             | 2 "                                          | 2 "                                                                 | Female         | "                            | 44      | 30 "                         | 9 "                            | "             | 1 "                                          | 3 "                                                                 | "              | "                            |
| 16      | 20 "                         | 9 "                            | "             | 2 "                                          | 6 "                                                                 | "              | "                            | 45      | 32 "                         | 9 "                            | "             | Complete                                     | ¾ "                                                                 | "              | "                            |
| 17      | 34 "                         | 9 "                            | "             | 2 "                                          | 6 "                                                                 | "              | "                            | 46      | 29 "                         | 9 "                            | "             | 1½ inches.                                   | 2 "                                                                 | "              | "                            |
| 18      | 28 "                         | 9 "                            | "             | 2 "                                          | 2 "                                                                 | Twin females   | 1 still-born 1 living.       | 47      | 25 "                         | 9 "                            | "             | Complete                                     | 22 "                                                                | "              | "                            |
| 19      | 24 "                         | 9 "                            | "             | 2 "                                          | 2 "                                                                 | Female         | Living.                      | 48      | 25 "                         | 9 "                            | "             | Complete                                     | 1 "                                                                 | "              | "                            |
| 20      | 25 "                         | 9 "                            | "             | 2 "                                          | 4 "                                                                 | "              | "                            | 49      | 26 "                         | 9 "                            | "             | 1 "                                          | 1½ "                                                                | "              | "                            |
| 21      | 25 "                         | 9 "                            | "             | 2 "                                          | 1½ "                                                                | "              | "                            | 50      | 21 "                         | 9 "                            | "             | 1 "                                          | 3 "                                                                 | "              | "                            |
| 22      | 25 "                         | 9 "                            | "             | 1½ "                                         | 8 "                                                                 | "              | "                            | 51      | 32 "                         | 9 "                            | "             | 1 inches                                     | 3 "                                                                 | "              | "                            |
| 23      | 20 "                         | 9 "                            | "             | ½ "                                          | 3 "                                                                 | "              | "                            | 52      | 38 "                         | 9 "                            | "             | 1½ "                                         | 2½ "                                                                | Male.          | "                            |
| 24      | 38 "                         | 9 "                            | "             | 1 "                                          | 2½ "                                                                | "              | "                            | 53      | 23 "                         | 9 "                            | "             | 1½ "                                         | 2 "                                                                 | "              | "                            |
| 25      | 40 "                         | 9 "                            | "             | 1½ "                                         | 4½ "                                                                | Female         | "                            | 54      | 26 "                         | 9 "                            | "             | 1 "                                          | 2 "                                                                 | "              | "                            |
| 26      | 30 "                         | 9 "                            | "             | 1 "                                          | 3 "                                                                 | "              | Still-born.                  | 55      | 20 "                         | 8½ "                           | "             | Complete                                     | ¾ "                                                                 | "              | "                            |
| 27      | 25 "                         | 9 "                            | "             | 2 "                                          | 1 "                                                                 | "              | Living.                      | 56      | 36 "                         | 9 "                            | "             | ½ inch.                                      | 4 "                                                                 | Female         | "                            |
| 28      | 24 "                         | 9 "                            | "             | 3 "                                          | ½ "                                                                 | "              | "                            | 57      | 26 "                         | 9 "                            | "             | ½ "                                          | 2½ "                                                                | Male.          | "                            |
| 29      | 32 "                         | 9 "                            | "             | 2 "                                          | 1½ "                                                                | "              | "                            |         |                              |                                |               |                                              |                                                                     |                |                              |

PRIMIPARÆ.

|    |        |         |         |           |         |        |             |    |        |         |         |           |        |        |             |
|----|--------|---------|---------|-----------|---------|--------|-------------|----|--------|---------|---------|-----------|--------|--------|-------------|
| 1  | 19 yrs | 9 mths. | Vertex. | 1 inches. | 10 hrs. | Male.  | Living.     | 23 | 20 yrs | 9 mths. | Vertex. | 1 inches. | 6 hrs. | Female | Living.     |
| 2  | 26 "   | 9 "     | "       | 3 "       | 1¼ "    | Female | "           | 24 | 26 "   | 9 "     | "       | 3 "       | 24 "   | Male.  | "           |
| 3  | 21 "   | 9 "     | "       | 3 "       | 4 "     | "      | "           | 25 | 19 "   | 9 "     | "       | 1 "       | ½ "    | "      | "           |
| 4  | 17 "   | 9 "     | "       | 2 "       | 12 "    | "      | "           | 26 | 25 "   | 9 "     | "       | 3 "       | 2 "    | "      | Still-born. |
| 5  | 6 "    | 9 "     | "       | 2 "       | 12 "    | Male.  | Still-born. | 27 | 25 "   | 9 "     | "       | 1 "       | 9 "    | "      | Living.     |
| 6  | 21 "   | 9 "     | "       | ½ "       | 18 "    | "      | Living.     | 28 | 22 "   | 9 "     | "       | 1 "       | 6 "    | Female | "           |
| 7  | 20 "   | 9 "     | "       | 1 "       | 6 "     | Female | "           | 29 | 22 "   | 9 "     | "       | 1 "       | 12 "   | Male.  | "           |
| 8  | 21 "   | 9 "     | "       | 1 "       | 6 "     | Male.  | "           | 30 | 22 "   | 9 "     | "       | 2 "       | 2 "    | Female | "           |
| 9  | 22 "   | 9 "     | "       | 2½ "      | 1½ "    | Female | "           | 31 | 21 "   | 9 "     | "       | 1½ "      | 3 "    | Male.  | "           |
| 10 | 18 "   | 9 "     | "       | ½ "       | 3 "     | "      | "           | 32 | 25 "   | 9 "     | "       | 1 "       | 6 "    | "      | "           |
| 11 | 10 "   | 9 "     | "       | 2 "       | 2 "     | "      | "           | 33 | 35 "   | 9 "     | "       | 1½ "      | 8 "    | Female | "           |
| 12 | 10 "   | 9 "     | "       | Complete  | ¾ "     | Male.  | "           | 34 | 31 "   | 9 "     | "       | 1½ "      | 5 "    | "      | "           |
| 13 | 20 "   | 9 "     | "       | 1 inches. | 3 "     | "      | "           | 35 | 25 "   | 9 "     | "       | 2½ "      | 7 "    | "      | "           |
| 14 | 10 "   | 9 "     | "       | ½ "       | 9 "     | Female | "           | 36 | 19 "   | 9 "     | "       | 1½ "      | 6½ "   | "      | "           |
| 15 | 23 "   | 9 "     | "       | 1½ "      | 1 "     | "      | "           | 37 | 22 "   | 9 "     | "       | ½ "       | 36 "   | Male.  | Still-born. |
| 16 | 18 "   | 9 "     | "       | ½ "       | 6½ "    | "      | "           | 38 | 18 "   | 9 "     | "       | 2 "       | 7 "    | "      | Living.     |
| 17 | 24 "   | 9 "     | "       | 1 "       | 4 "     | "      | "           | 39 | 15 "   | 9 "     | "       | 1 "       | 3 "    | "      | "           |
| 18 | 18 "   | 9 "     | "       | 1 "       | 4 "     | Male.  | "           | 40 | 21 "   | 9 "     | "       | Complete  | 2½ "   | "      | "           |
| 19 | 18 "   | 9 "     | "       | 1½ "      | 3 "     | "      | "           | 41 | 20 "   | 9 "     | "       | 2 inches. | 1 "    | Female | "           |
| 20 | 18 "   | 9 "     | "       | Complete  | ¾ "     | Female | "           | 42 | 27 "   | 9 "     | "       | 1 "       | 5 "    | "      | "           |
| 21 | 19 "   | 9 "     | "       | 1 inches. | 7 "     | "      | Still-born. | 43 | 18 "   | 9 "     | "       | Complete  | 1-12 " | Male.  | "           |
| 22 | 17 "   | 9 "     | "       | 2½ "      | 1½ "    | Male.  | Living.     |    |        |         |         |           |        |        |             |

Spontaneous change from face to vertex presentation occurred in case 43 of the multiparæ. At the first examination the os uteri was found patulous, and dilated to the extent of one inch. The face was found presenting with chin directed towards the symphysis pubis. Immediately after the examina-

tion the patient, desiring to void urine, got up, she having been disposed to occupy the bed. While in an upright position a strong movement of the foetus caused her to cry out. On returning to her couch, the pains becoming unusually severe, I proceeded to another examination and was aston-



ished to find the vertex presenting in the natural way. This conversion from face to vertex presentation was sudden, and evidently did take place by forcible pressure through points offering the least resistance, as in cases spoken of by M. Guillemot. The presentations in the cases of twins were as follows: In one instance the vertex of one fœtus presented in the first position and that of the other in the third. In the second instance the presentations were in the first and second positions respectively.

EXTENT OF DILATATION OF THE OS UTERI ON FIRST EXAMINATION.—In every instance this was determined during the labour pains. Among the multiparæ, at the time of the first examination, the os was found completely dilated in eight instances, and, in two, no dilatation was perceptible. The average dilatation found among the multiparæ, at this time, was one and four-tenths inches. Among the primiparæ the dilatation was found complete in four cases. In every instance, in this class, there was found some dilatation. The average dilatation of the os uteri among the primiparæ was, also, one and four-tenths inches, the same as with the multiparæ. In nearly one-half of both classes the dilatation did not exceed one inch at the time of first examination.

DURATION OF LABOR AFTER ARRIVAL AT THE BEDSIDE TILL EXPULSION OF FÆTUS.—In the category of anxious inquiries that present themselves to the minds of both physician and patient in cases of parturition none is of greater interest than: "What will be the probable duration of the labour?" The character of the answer to this inquiry must greatly depend upon the condition of the patient when first seen by the accoucheur. To this end data pertaining to the condition of os uteri at this time were incorporated in the record.

Among the multiparæ the longest duration of labour after the first examination was twenty-two hours. In this case the os had not commenced to dilate, and the first stage of labour was lingering. The shortest time required for the expulsion of the fœtus, in this class, after arrival at the bedside, was fifteen minutes, the dilatation of the os being found complete. The average duration of labour among the multiparæ, in accordance with the record, was three hours and six minutes. Among the primiparæ the longest time required for the expulsion of the fœtus was thirty-six hours. The presentation was one

of face, previously mentioned. The shortest duration of labor in this class, as recorded, was five minutes, the dilatation of the os uteri being complete, and the vertex presenting at the perineum. The average duration of labor among the primiparæ, after the first examination until the expulsion of the fœtus, was five hours and forty-one minutes, or two hours and thirty-nine minutes longer than with that of the multiparæ.

SEX OF FÆTUS.—In both classes together there were forty-two male and sixty female children born. This number includes one case of male twins and one case of female twins among the multiparæ.

FÆTUS LIVING, OR STILL-BORN.—In fifty-six cases among the multiparæ, the fœtus was born living, and three were still-born. Among the primiparæ there were thirty-nine living-births and four still-births.

ANOMALOUS CASES.—Case 7 of the primiparæ had, for some time preceding accouchement, marked chorea. Under the use of conium and hygienic treatment, this was greatly relieved, and it entirely disappeared soon after delivery. Case 27 of the primiparæ was one of irregular contraction of the uterus, and required the forcible dilatation of the stricture and separation of the placenta, which was, to the extent of about two square inches, firmly attached near the fundus. The stricture was above the os internum, a portion of the placenta protruding below. No anæsthetic was employed, and no extreme distress attended the removal of the placenta. The uterus properly contracted on the removal of the secundines. The two most generally specified causes for the irregular contraction of the uterus in the third stage of labor are, incautious administration of ergot, and undue traction upon the funis. To neither one of these causes could this particular accident be attributed. Ergot was not employed, and the contraction occurred immediately after the expulsion of the fœtus. A similar accident occurring in my practice the following year may have been caused by the previous administration of some ergot, but I do not consider that it was incautiously administered. The evidence in both cases seems to point to the firm adherence of a portion of the placenta to the uterus as a cause, the placenta resisting all the natural efforts for its expulsion.

In case 25 of the multiparæ, the cord was but *ten* inches in length. The placenta had a natural appearance, with the exception of two cotyledons in the membranes adjacent to



the border of the placenta proper. The fœtus was small, and had but two fingers on one hand and three on the other. The hands were immovably flexed at the wrist, their palmar surfaces resting upon the fore-arm. There was a history of tubercle on the mother's side, and the father was a confirmed epileptic. There were three other living, one of whom showed a marked tubercular diathesis. Case 39, of the primiparæ became enciente when fourteen years and three months of age, and had just passed her fifteenth birthday when she was confined. Her nativity was Irish. Of the one hundred cases this was the only one where eclampsia occurred. The spasms came on suddenly, were clonic, and occurred at the moment the head began to press upon the perineum. The forceps were applied, cold, without delay, and on the immediate delivery of the head of the fœtus, the spasms ceased. No other means of relief were adopted but to deliver the fœtus. There were no dropsical symptoms. The mother made an easy recovery, and no injury occurred to the child. One year and twenty-three days subsequently I was called to attend her again in confinement. This made her a multipara at the unusually early age of seventeen years. Considering the special and immediate call for the use of the forceps at her first confinement, if there is any moral to be associated with the history of this case, it is, when called to attend a case of labor always carry your forceps with you. In case 51 of the multiparæ, there was an umbilical hernia of long standing, and, apparently, fatty degeneration of the muscles of the abdomen. During the latter part of the first stage of labor, owing to the absence of aid from the abdominal muscles, at each pain the uterus was thrown outwards and forwards above the symphysis pubes in the most alarming manner. Artificial pressure aided in the advancement of the labor, and, as soon as possible, the forceps were applied.

The fact that there were seven cases of

still-births in these one hundred cases of confinement, naturally would elicit comment. Two of them were forcep cases, and, of uncommon presentation, previously referred to. One occurred in a case of badly nourished twins. In one instance the accident could not be accounted for. In one it seemed due to a prolonged first stage of labor. One was explained by the evidence of extreme malnutrition in the fœtus, the mother having been an invalid for several months previous to the confinement. The other still-birth was related to case 26 of the multiparæ, and was one of considerable interest. It was one of dropsy of the amnion. When I arrived at the bedside the patient had been in labor twenty-four hours. On inquiry as to the frequency of the pains she replied, "It's all one pain!" According to her testimony there had been no intermission in the contraction since the labor began. The os was dilated to the extent of an inch, and the uterus was greatly distended. I ruptured the membranes at once, when the vertex pressed down on the os preventing any escape of the liquor amnii. Even after the rupture of the membranes there was one continuous contraction until the expulsion of the fœtus, which occurred three hours thereafter, with a great discharge of the waters. Had the membranes been ruptured earlier, the mother would have been relieved, and the life of the child possibly have been saved.

Extreme rigidity of the os uteri occurred but in a few instances. There was a considerable, but incomplete rupture of the perineum in two of the cases. The use of the forceps was limited to eight cases. There were no cases of extreme dropsy, or of typical puerperal fever. Anæsthetics were employed in the most severe cases. In nearly every instance the fœtal heart-sound was discernible; the placenta souffle less frequently. No death of the mother occurred among the number. Excessive hemorrhage occurred in three cases after the termination of the second stage of labor.



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